

10/21/13

Agenda

- Opener

- Section 2.9 - Percents

- Homework

  - HW 2.9 - p. 141-143 (10-36 evens (skip 30), 54, 56)

Warmup:

Solve these proportions:

$$x=60 \quad \frac{54}{90} = \frac{x}{100}$$
$$\frac{90x}{90} = \frac{5400}{90}$$
$$x=60$$

$$\frac{x}{60} = \frac{150}{100} \quad x=90$$
$$100x = 60 \cdot 150$$
$$\frac{100x}{100} = \frac{9000}{100}$$
$$x=90$$

Goal:

Solve % problems using proportions.

Percents:

Two ways of looking at it

 $a$  is  $p$  percent of  $b$ :

$$\frac{\text{PART} \rightarrow a}{\text{BASE} \rightarrow b} = \frac{p}{100} \leftarrow \text{PERCENT}$$

$$\frac{\text{is}}{\text{of}} = \frac{\%}{100}$$

Three types of % problems:

Percent Problems:

Solve like a proportion:

What percent of 50 is 25?

$$\frac{25}{50} = \frac{x}{100}$$

$$\frac{50x}{50} = \frac{2500}{50}$$

$$x = 50\%$$

What percent of 56 is 42?

$$\frac{42}{56} = \frac{x}{100}$$

$$\frac{56x}{56} = \frac{4200}{56}$$

$$x = 75\%$$

You Try:

What percent of 90 is 54?

$$\frac{54}{90} = \frac{x}{100}$$

$$\frac{90x}{90} = \frac{5400}{90}$$

$$x = 60\%$$

What percent of 40 is 2.5?

$$\frac{2.5}{40} = \frac{x}{100}$$

$$\frac{40x}{40} = \frac{250}{40}$$

$$x = 6.25\%$$

"IS" Problems:  
(solve for part)

$$\frac{\text{IS}}{\text{OF}} = \frac{\%}{100}$$

What is 25% of 112?

$$\frac{X}{112} = \frac{25}{100}$$

$$100x = 25 \cdot 112$$

$$\frac{100x}{100} = \frac{2800}{100}$$

$$x = 28$$

What is 150% of 60?

$$\frac{X}{60} = \frac{150}{100}$$

$$100x = 60 \cdot 150$$

$$\frac{100x}{100} = \frac{9000}{100}$$

$$x = 90$$

What is 2% of 28?

$$\frac{X}{28} = \frac{2}{100}$$

$$100x = 2 \cdot 28$$

$$\frac{100x}{100} = \frac{56}{100}$$

$$x = .56$$

$$\frac{\text{IS}}{\text{OF}} = \frac{\%}{100}$$

You Try:

What is 20% of 85?

$$\frac{X}{85} = \frac{20}{100}$$

$$100x = 20 \cdot 85$$

$$\frac{100x}{100} = \frac{1700}{100}$$

$$x = 17$$

What is 225% of 200?

$$-- = --$$

"OF" Problems:  
(solve for base)

$$\frac{IS}{OF} = \frac{\%}{100}$$

20% of what number is 40?

$$\frac{40}{X} = \frac{20\%}{100}$$

$$20x = 40 \cdot 100$$

$$\frac{20x}{20} = \frac{4000}{20}$$

$$x = 200$$

125% of what number is 17.5?

$$\frac{17.5}{X} = \frac{125}{100}$$

$$\frac{125x}{125} = \frac{1750}{125}$$

$$x = 14$$

You Try:

30% of what number is 12.5?

$$\text{---} = \text{---}$$

5% of what number is 12?

$$\text{---} = \text{---}$$

Summary: Remember how to solve proportions. Set up the percent problem as a proportion and solve for the missing piece. Use common sense to remember (check) if you solved it properly!

$$\frac{IS}{OF} = \frac{\%}{100}$$

## Section 2.9 - Percents

## Target 2F

Word Problems:

A dress shirt normally costs \$38.50 and is on sale for 30% off. What is the sale price?

(hint, what percent are you paying?)

A family sells a car to a dealership for 60% less than they paid for it. They originally paid \$9000 for the car. How much did they sell it for?

(hint, what percent did they sell it for?)

Summary:

Remember how to solve proportions. Set up the percent problem as a proportion and solve for the missing piece. Use common sense to remember (check) if you solved it properly!